LEITNER control system

LEITNER ropeways


LEITNER
ropeways

LEITNER control system

Innovative, safe and reliable

Our solutions are characterized by innovative ideas, sustainable customer benefits and the application of leading technologies. The LEITNER DirectDrive with active-infeed converter technology, for example, is a milestone within the development of intelligent mechatronic components for the ropeway market.

Approved LEITNER software reliably manages the control and monitoring functions of the installation. As hardware periphery, we use fail-safe automation devices from Siemens. By combining our technological knowledge with the best industrial electrical products, we achieve an excellent performance in the automation of ropeway installations.

The LEITNER control system is characterized by continuous networking of the entire facility with Industrial Ethernet and optical fibers as well as decentralized I/O peripheral devices. In interaction with LeitControl, downtimes can be reduced to a minimum.

The innovative operating and monitoring system LeitControl offers all advantages of web-based IT technologies. Remote diagnostics and remote maintenance via Internet as well as numerous LEITNER online services provide the best support for your staff to maintain the facility.

Our technicians design trend-setting solutions and are your partners across the installation's entire life cycle.

LeitControl

Easy, intuitive, central

Basis

LeitControl is a completely novel, touch-control-based operational concept for ropeways. Thanks to its easy, central and highly intuitive control system, this LEITNER innovation offers ropeway operators new levels of ease of use.

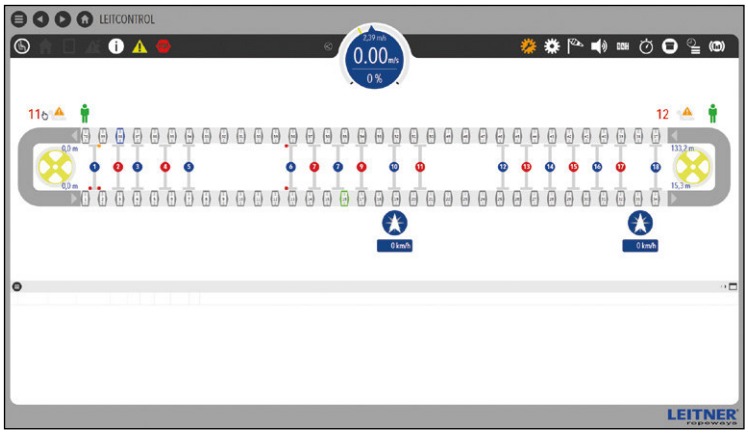
Description

The basic idea for the development of LeitControl was the conversion of the system from a hardware-oriented to an application/function-oriented operational concept. The newly developed operator panel features all control keys needed for day-to-day operation.

With a conventional control system, up to 7 individual, manual operational steps have to be taken, for example, in order to garage the vehicles – from the correct positioning of the system and the adjustment of the switch points to the start of the conveyor chains. With LeitControl, the operator simply needs to activate the GARAGING function, and the rest of the process is carried out fully automatically without any further operator action.

This operational concept runs through the entire operation of the system, both during normal operation and during trials and tests (e.g. brake tests) that are necessary for commissioning and/or regular inspections.

Moreover, LeitControl allows monitoring all ropeways within a skiing region centrally from a single screen.



Benefits

All **operating elements** needed for the system's **day-to-day operation** are aligned at the operator panel, with a **clear view of the passenger area**.

Fully automated take-over of all functional processes which previously had to be controlled manually (e.g. vehicle parking procedure, brake tests).

Utmost ease of use for operators through an **easy, clearly arranged operator panel** and **intuitive touch-screen operation** via **multi-screen** or **tablet**.

Significant reduction of **training periods** for new employees and **avoidance of operator errors** and related downtimes **during day-to-day operation** thanks to a **function-oriented control concept**.

Integrated **help function** with linking to wiring schemes and the user manual.

Optional integration of **automated announcements** and display of the visualization in **various**, quickly **changeable languages**.

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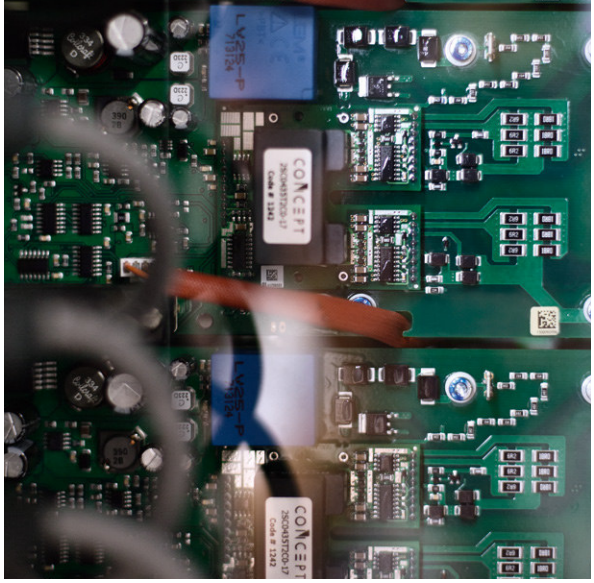


LEITNER control system

Functional safety that meets the highest demands

Basics

Even under the toughest conditions, the highest demands are placed on the functional safety and reliability of the installation. LEITNER control systems provide perfect automatic operation and, thanks to their high performance, support the continuously high availability of the installation.

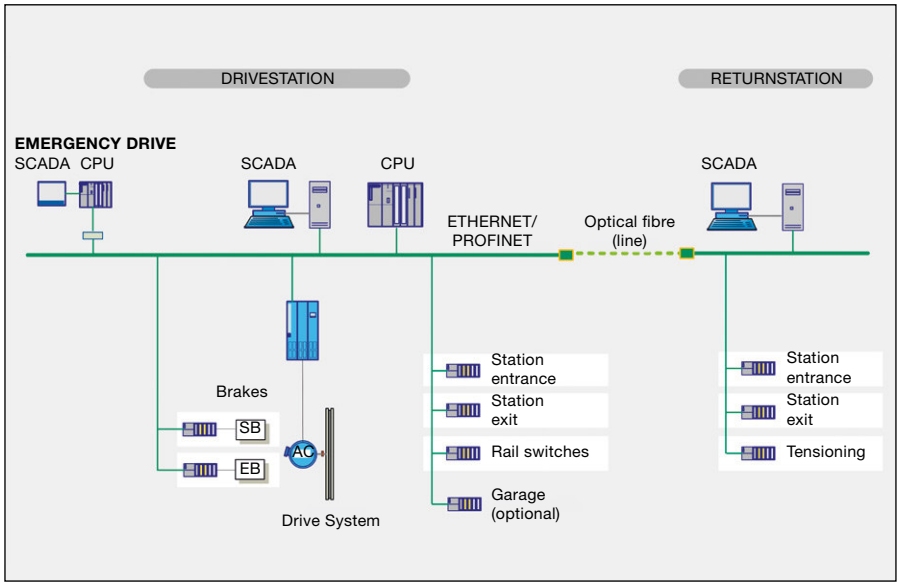
Description

All control and monitoring functions are carried out by fail-safe PLC units. Cutting-edge Simatic S7 automation systems from Siemens form the hardware basis of our control systems.

The future-proof architecture of the LEITNER control system is characterized by the decentralized design of the I/O controllers and of the peripheral modules.

For a high-performance automation system, providing real-time data and information about the complete installation is a must-have. The LEITNER control system is characterized by a continuous Ethernet communication structure. A fiber-optics Profinet network connects the stations. Field devices of all sub-systems (e.g. brakes, tensioning system) are connected to the central CPU in the drive station.

This ensures that a homogeneous data base of the entire ropeway is available for processing through the LEITNER control software or through high-performance operating and display functions in the visualization system LeitControl. The transparency of the data and an extensive diagnostic ability is upheld even in emergency drive operation.



Benefits

Approved fail-safe technology and extensive **safety engineering** ensure a correspondingly high level of risk reduction. The system's **functional safety** is guaranteed by LEITNER ropeway software, which, in connection with TÜV-certified programs and Simatic S7 F automation devices, has proven its worth around the world.

All exposed Simatic components are built in SIPLUS technique. Even when operated at low temperatures and under great stress from air humidity, these robust components show **enhanced reliability**.

For installations requiring high availability, the **modular LEITNER control concept** can also be upgraded to a **redundant two-channel version** – preferably in cold-standby design.

In either case, the **LEITNER bypass system** supports your staff in fulfilling the **task of maintaining** the **system's availability** through safe and transparent deactivation of individual safety functions.

Maintenance work is made easy by the decentralized design of the control installations. Continuous **Ethernet communication** enables the operating personnel to utilize **high-performance diagnostic functions** – either through the user-friendly LeitControl or through LEITNER webnavigator **remote maintenance** or **remote diagnostics**.

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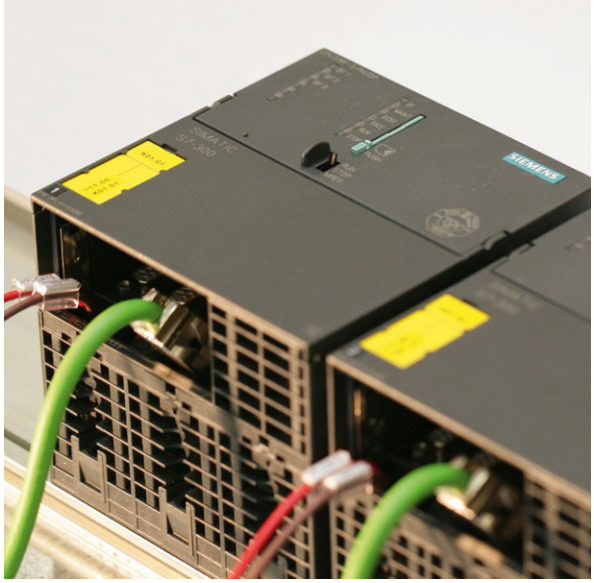


Redundant LEITNER control system

Guaranteed availability

Basics

Important ropeways should not stand still – this is where the redundant LEITNER control system comes into play. The highly available system configuration guarantees maximum protection against breakdowns. Your passengers can enjoy the unlimited availability of the installation.

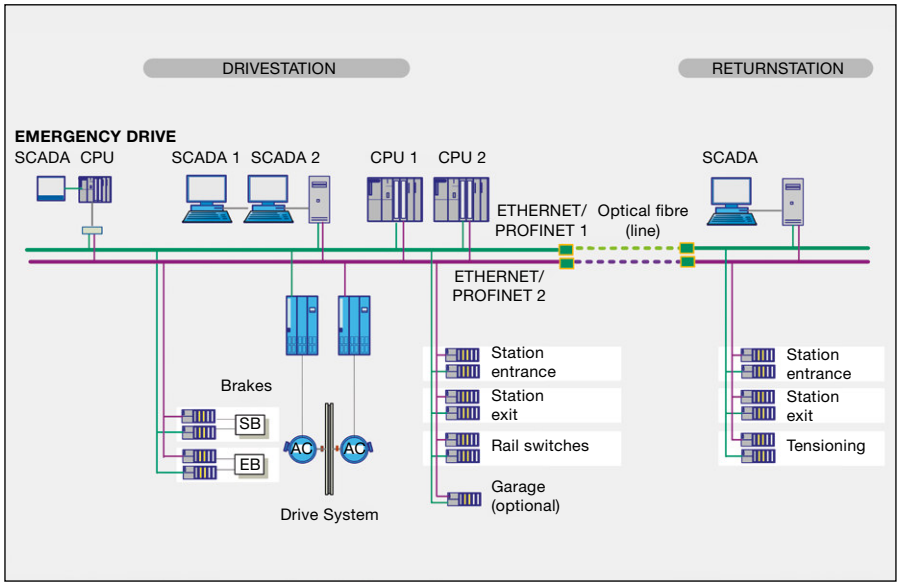
Description

The redundant LEITNER control system is characterized by a continuous two-channel structure of its control and monitoring functions. Two central I/O controllers (CPUs) in the drive station are operated in cold-standby mode. Double remote I/O field devices are also at hand and networked with the I/O controllers via redundant communication structures.

In case of demand, the remaining I/O controller or the second peripheral unit simply takes over the function – thus enabling the installation to keep running smoothly.

The redundant LEITNER control system also provides a continuous Industrial Ethernet networking of the entire facility, including all advantages that come with it. It connects the field devices of all subsystems (e.g. brakes, tensioning system) to the two central I/O controller units in the drive station.

This ensures that a homogeneous data base of the entire installation is available for processing through the LEITNER control software or for the high-performance operating and display functions in the visualization system LeitControl.



Benefits

The redundant LEITNER control system concept represents a **perfect solution** for the **highest demands** in terms of system availability – e.g. in urban applications or especially **important connecting ropeways**.

The **innovative structure** of the two-channel LEITNER control system, the application of **premium-quality industrial components** and the consistent implementation of quality control measures guarantee the **highest level of installation availability**.

Fail-safe technology and extensive **safety engineering** ensure a correspondingly high level of risk reduction. The **functional safety** is guaranteed by proven LEITNER ropeway software in connection with TÜV-certified programs and fail-safe automation devices from Siemens.

All exposed Simatic components are built in SIPLUS technique. Even when operated at low temperatures and under great stress from air humidity, these robust components show **enhanced reliability**.

Continuous **Ethernet communication** supports the provision of **high-performance diagnostic functions** – either through the user-friendly LeitControl or through **online support** such as remote maintenance or remote diagnostics via LEITNER webnavigator internet connection.

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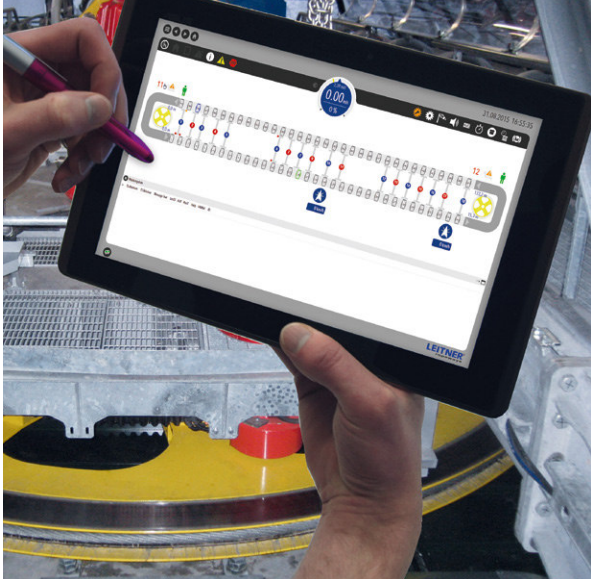


Tele-assistance and mobile control panels

Improving functionality, ensuring availability

Basis

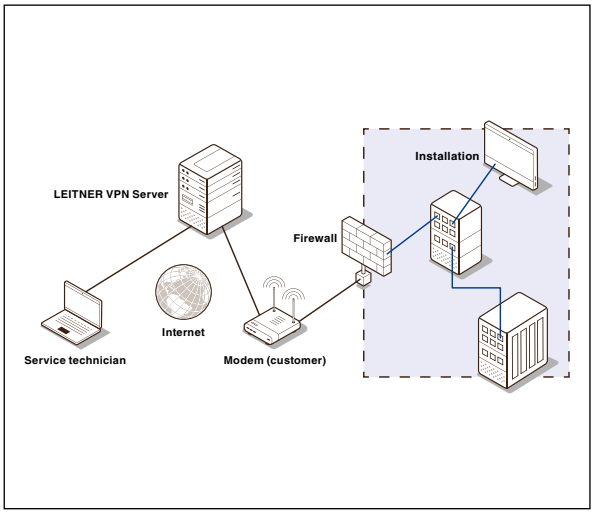
For the LEITNER control system, a tele-assistance and optional control panels have been developed in order to facilitate the ropeway operator's day-to-day work at the installation, to improve functionality and to ensure availability.

Description

Via the internet, the LEITNER tele-assistance connects the ropeway installation with the PC of a LEITNER service technician, using a firewall-protected VPN connection. This makes it possible to check the installation's operating status directly from LEITNER headquarters in Sterzing (Italy) and to quickly and efficiently support the operator in checking the installation's functionality and in finding solutions.

The LEITNER radio remote controls for the station, the garage and the line were developed for a user-friendly and location-independent operation of the installation. That's why there is a central radio master unit built into the control cabinet, which communicates with the ruggedly and modularly designed remote controls via a 433-MHz ISM band. At the control cabinet as well as on the radio remote control, radio operation has to be activated with a key switch or a coded magnet key, respectively.

With the new, mobile operation monitoring system, the visualization of the installation can be transmitted via WLAN to further PCs as well as to mobile devices (tablet, smartphone). This makes monitoring the installation status easy and location-independent. Moreover, this allows for several LEITNER installations in a skiing region to be monitored with a single mobile device.



Benefits

The **LEITNER tele-assistance** supports **trouble-shooting and fault correction** and thereby **avoids unnecessary mobilization** of service personnel.

Installation **downtimes** can be **reasonably shortened** while **improving operational reliability**, both of which decisively **helps reducing operating costs**.

Easy and user-friendly remote control of the installation with **LEITNER radio remote controls** offering the following functions:

- Reset/start/stop ropeway (also from the maintenance vehicle during inspection)
- Start/stop station
- Emergency stop
- Speed control
- Access control on/off
- Forward/backward conveyor chain
- Various station functions

Easy monitoring of the ropeway via **the mobile operation monitoring system** using external PCs, smartphones or tablets.

Considerable **ease** of **maintenance work** and mandatory daily **station inspections** thanks to **location-independent visualization** of the installation status, e.g.:

- General status
- Stop and maintenance bypass
- Wind speeds/wind speed recording
- Status of the batteries
- Status of the brakes
- Various monitoring recordings

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